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JOSEPH PARTON

**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**
UNIVERSITY OF ALABAMA IN HUNTSVILLE
HUNTSVILLE AL 35899

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# Management and Operation of the Production Engineering Division Stereolithography (SL) Laboratory

**Final Report**

Prepared for:
US Army Aviation and Missile Command
Missile Research, Development and Engineering Center
Systems Engineering and Production Directorate
Redstone Arsenal, AL 35898

Prepared by:

Joseph Paxton
Center for Automation and Robotics
University of Alabama in Huntsville
Huntsville, AL 35899
(256) 824-6240



September 2001

# Management and Operation of the Production Engineering Division Stereolithography (SL) Laboratory

**Final Report**
**September, 2001**

## 1.0 INTRODUCTION

The Production Engineering Division (PED), SEPD, MRDEC, AMCOM has the mission and function of providing rapid prototypes via SL to various AMCOM customers. The PED provides the following services to its customers: assistance in generating acceptable Computer Aided Design (CAD) files, delivering these files to the SL laboratory, building SL prototypes using both the ACES and QuickCast (QC) build styles, finishing prototypes to the customers' specifications, and facilitating the investment casting of QC prototypes. The PED requires engineering support in performing these SL tasks.

## 2.0 OBJECTIVE

The purpose of the work performed under this task order was to provide engineering support in producing SL prototypes for the PED customers.

## 3.0 TASKS

3.1 The tasks completed under this contract consisted of four (4) primary duties: maintaining the lab, quoting projects, scheduling projects and completing projects.

3.1.1 Maintaining the lab shall included tracking the needs of material and chemicals, as well as ensuring the lab continues to utilize state-of-the-art technologies. Maintaining state-of-the-art technologies included continuous research in the field, networking with other rapid prototyping service bureaus and users, and participating in conferences and user groups.

3.1.2 Scheduling projects included enhancing the build time estimator to incorporate QC builds and maximizing the SLA run time efficiency.

3.1.3 All SL prototypes were built using the PED SL equipment, including preparing and finishing the parts to customer specifications in accordance with standard SL procedures. This includes ACES and QC prototypes. Investment casting of QC prototypes were facilitated with various foundries.

3.2 The feasibility of developing relationships with private industry via Cooperative Agreements and other technology transfer avenues was investigated.